With funding from a grant from the Directors Discretionary Fund at the NASA Astrobiology Institute entitled “Modeling biogenic methane flux in the subseafloor: Quantification and diversity analysis of methanogens at deep-sea hydrothermal vents,” Dr. Huber participated in a research cruise to Axial Seamount and Endeavour Ridge, both located about 300 miles off the coast of Washington and Oregon in the Pacific Ocean. The cruise, led by NSF and NOAA funded scientists Dr. James Holden of the University of Massachusetts, Amherst and Dr. David Butterfield of the University of Washington, was a great success. One of the objectives of the cruise was to model the biogenic flux of methane in the subseafloor from diffuse flow vents at Axial and Endeavour. Dr. Huber is using a molecular-based approach to determine the abundance, diversity, and activity of methanogens in the subseafloor. This data will be integrated with Dr. Holden and Dr. Butterfield's cultivation and geochemical data to quantify and constrain methane flux in the deep sea. Because methane is both an important greenhouse gas on Earth, as well as a potential biomarker on other planets and moons, understanding its source and contribution to the carbon cycle in the deep sea is essential. During the cruise, Dr. Huber participated in 3 Alvin submarine dives to the seafloor (maximum depth 2300m), where she collected both low- and high-temperature fluids, took flow velocity measurements, and made seafloor observations.